

Claims

1. A process for performing a coupling reaction between acetaldehyde and a terminal alkyne to yield a hydroxyalkyne comprising the steps of:
  - (i) reacting without solvent; a terminal alkyne with zinc triflate in the presence of (+)- or (-)-N-methylephedrine and a cyclic amine base selected from the group comprising 1,8-diazabicyclo[5.4.0]undec-7-ene (DBU), 1,5-diazabicyclo-[4.3.0]non-5-ene and 1,4-diazabicyclo[2.2.2]octane, to form a metal-alkyne complex, and
  - (ii) adding a solution of acetaldehyde in a solvent selected from a hydrocarbon, aromatic hydrocarbon, ether, alcohol or chlorinated hydrocarbon to the metal-alkyne complex.
2. A process according to claim 1 wherein the terminal alkyne is of general formula  $R^1R^2C(OH)C\equiv CH$  in which  $R^1$  and  $R^2$  may be the same or different and are selected from the group comprising methyl, ethyl and propyl.
3. A process according to claim 1 or claim 2 wherein the acetaldehyde concentration is between 0.1 and 2 moles/litre.
4. A process according to any one of claims 1 to 3 wherein step (ii) is performed at -20 to 25°C over a period of 3 to 10 hours.
5. A process according to any one of claims 1 to 4 wherein the molar ratio of zinc triflate : acetaldehyde is 1.5:1, the molar ratio of cyclic amine base: acetaldehyde is 1.6:1 and the molar ratio of (+)- or (-)-N-methylephedrine to acetaldehyde is 1.6:1.